COMPARATIVE ANALYSIS OF THE MACROINVERTEBRATE FAUNA OF ECOLOGICALLY STABLE AND TRADITIONAL GARDEN PONDS

Bence Tamás[1*], Orsolya Ivett Hoffmann[1], Ákos Malatinszky[2]

[1]Department of Animal Biotechnology, Institute of Genetics and Biotechnology, Hungarian University of Agriculture and Life Sciences, Gödöllő, HUNGARY
[2]Department of Nature Conservation and Landscape Management, Institute for Wildlife Management and Nature Conservation, Hungarian University of Agriculture and Life Sciences, Gödöllő, HUNGARY

[*]corresponding author: tamasbence17@gmail.com

Freshwater habitats are considered to be highly vulnerable globally. For some species, mainly invertebrates, artificial ponds created to decorate urban gardens provide sufficient habitat or function as a stepping stone. However, traditional garden ponds require expensive and energy- consuming machinery to maintain their aesthetic appearance, which can lead to the release of synthetic chemicals into the environment that can harm wildlife. In contrast, the ecologically stable garden ponds, which are distinguished from the traditional garden ponds by their design and the complex ecosystem that maintains them, offer a solution for the problems of eutrophication and succession, and maintain optimal water quality in an environmentally and cost-effective way. The objective of this study was to compare the aquatic macroinvertebrate fauna diversity between traditional garden ponds and ecologically stable garden ponds that were designed and constructed by the first author. Five ponds of both types were examined, via collecting biological specimens from 90 sampling point. Altogether 45 species were identified, and one taxon at genus level. Twenty-one macroinvertebrate species were present in both types of ponds, while two species were found only in traditional garden ponds and 23 species were identified only in ecologically stable garden ponds, of which one species is protected by the law. Our statistical analysis indicates that the macroinvertebrate fauna of ecologically stable ponds is much richer in terms of species abundance compared to that of a traditional garden pond.